



Project: San Joaquin Renewables, Class VI UIC Application

Location: Kern County, California

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Subject: Post CO<sub>2</sub> Injection Recommended Injection Well Plugging and Abandonment Plan

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After CO<sub>2</sub> injection is discontinued, the injection well must be abandoned. The recommended plugging and abandonment (P&A) operations described below will remove the injection tubing and packer, and squeeze cement into the perforations through a cement retainer. A coiled tubing unit (CTU) will be used to place cement at intervals from plugged back total depth (PBSD) to surface to conform with applicable U.S. EPA standards for a Class VI well.

#### **Proposed Well P&A Program**

Objective: Kill well, remove completion equipment, squeeze perforations with cement.

##### Summary Procedure:

1. Move in and rig up (MIRU) equipment on location including blowout prevention equipment (BOPE).
2. Run wireline survey to measure bottomhole pressure and confirm PBSD.
3. Kill well with brine of appropriate density to prevent flowback.
4. Pull completion tubing and packers.
5. Land corrosion resistant cement retainer at 7700'.
6. Rig up (RU) cementers. Down squeeze cement through tubing and retainer until pressure increases but remains below formation fracture gradient. Calculate maximum allowable injection pressure based on bottomhole pressure data.
7. Un-string tubing from retainer and pull out of hole (POOH).
8. RU CTU and place continuous cement plug from top of retainer at 7700' to surface.
9. Rig down CTU and cementers.
10. Nipple down (ND) BOPE. Rig down move out (RDMO).
11. Dig out cellar, cut casing five feet below ground level (GL) and flush with outer casings.
12. Weld steel plate on top of casing marked with well API and injection permit number.



13. Survey final well location.
14. Backfill cellar, clean location, and remove all debris. RDMO all equipment and commence applicable surface reclamation efforts.